

The concept of the health department library as a community center for health education on the higher levels is often not applicable in large centers where the libraries of schools of public health or of medical societies may fully serve all local needs. There are, however, many areas (perhaps most areas in the United States) where such needs are not otherwise met. The State Board of Health at Jackson maintains the only library in Mississippi established for the service of the medical and health professions. It offers not only a reading room but a mail lending-library service. In one recent biennium it added 639 volumes to its shelves, of which about half were bound volumes of periodicals. Its mimeographed list of "Basic Books for the Local Health Department" includes more than 120 titles, and 14 journals are listed as "indispensable." In a recent circular to health workers throughout the state, it was pointed out that "every local health department should have two or three shelves of the basic books in public health and these should be accessible to all members of the staff for easy consultation" (to be supplemented by loans from the State Library when necessary).

The wide community service carried on in Mississippi may be impracticable in many areas. The need of the staff for adequate reference material is, however, universal. The New York State Health Department, for example, has an admirable working library (under the direction of Miss Sexton). The Louisiana State Board of Health has a library of very precious volumes relating to the early history of public health. Every city and town department of health should certainly have its "two or three shelves" of basic books. They are essential for the administrator, the medical specialist, the engineer, the laboratory worker, the industrial hygienist, the educator, the nutritionist, the nurse.

We urge all our readers to review the adequacy of their library budgets and to consider whether they are asking their staff to make bricks without straw. We suggest that larger departments, which may be reasonably well supplied with books, remember that the maintenance of a library and its effective use depend upon expert leadership. In such departments the trained or experienced public health librarian should be recognized as an essential member of the staff.

THE VANISHING VECTORS

THE thoughtful reader will find the address by J. M. Andrews in this issue of the *Journal* a fascinating story of man's triumph over his insect enemies. The control of diseases transmitted by arthropods stands—with the control of other diseases by protective immunization—as one of the two most dramatic victories of public health.

On this front of the war against disease we have had certain manifest advantages. The more complicated the life history of a parasite, the more vulnerable it must be to attack. Where there is an intermediate host, we can break the chain of infection by eliminating the non-human vector or by controlling the passage of the germ from man to the vector or from the vector to man; and, in areas where economic conditions permit such control, plague and typhus fever, malaria and yellow fever have lost the terrible potencies of the past. The discovery of such new weapons as DDT has enormously strengthened our defenses along this line.

It is true, as Dr. Andrews has pointed out, that these defenses have their basic limitations. The chemicals we use to destroy insects may—if carelessly used—be in themselves harmful to man, although such danger does not seem serious. It is also true that strains of insect carriers develop which have special resistance against a

particular toxic substance; but, with the variety of chemical weapons at our disposal, this difficulty can usually be overcome.

On our side is one very powerful influence. The economist has to face a Law of Diminishing Returns; but in the control of insect carriers of disease, we have the advantage of a Law of Increasing Returns. Long before the last human carrier of malaria and the last *Anopheles* mosquito have disappeared, the chance that a given mosquito will receive infection from a human carrier and transmit it to a susceptible victim within a definite time limit becomes mathematically so small that the disease disappears.

In certain cases it has actually been possible to eradicate a particular type of insect vector from a particular region of the globe. This was achieved with *Anopheles gambiae* in northeast Brazil, and in Sardinia, Cyprus, and Tobago programs for complete elimination of anophelines are under way. "Chile claims to be the first, and at present the only American country to have exterminated both malaria and anophelism."

Practically complete control of actual human disease can, however, be accomplished by far less rigorous methods. A century ago even the Northern United States was a hotbed of malaria. The chills and ague described in Martin Chuzzlewit were almost universal phenomena. The building of the Erie Canal had to be interrupted in summer because so many workers were incapacitated by malaria. Malaria was still mildly endemic in New England up to a quarter of a century ago. Today all this has changed; and, in large measure, the change has been brought about, not by intentional antimalarial campaigns, but by elimination of breeding places through agricultural drainage and protection of man through better constructed houses.

The same process—materially aided by specific anti-anopheline programs—has more recently taken place in the South. *Public Health Reports* cites 5,238 cases of malaria for the United States in the year including the last quarter of 1948 and the first three quarters of 1949. Of these, 3,227 were reported from Texas, 699 from South Carolina, and 400 from Arkansas, leaving only 912 cases for all the rest of the country. Even the small number of cases now reported is perhaps higher than the actual facts warrant. Students of malaria in such institutions as Tulane find it practically impossible to obtain indigenous malaria cases for research and are forced to limit themselves to the study of treated paretics. In one southern county supposed to have a high incidence of malaria, a bounty was offered of \$5 for every reported case substantiated by blood examination. The county spent \$70 in a year. It is clear that malaria has almost disappeared from our southeastern states and it is probable that the doctors are in some instances reporting a variety of obscure fevers as malaria, with no valid justification. The fact that tens or hundreds of thousands of veterans returning from the Pacific with malarial plasmodia in their blood streams caused not a single serious local epidemic was a surprise to many of us. It gave convincing proof that the conditions necessary for the spread of this disease were absent. Malaria in the entire United States is now a vanishing disease.

This is, of course, no argument for a let-up in the precautionary measures which have made this satisfactory situation possible. In malaria control, as in typhoid control and diphtheria control, constant vigilance is the price of liberty. In the less fortunate areas of the world—with which post-war developments have brought us into close relations—the control of insect vectors is the No. 1 health problem.

The major microbic threat to the continental United States, however, is that of the upper respiratory infections and such epidemiologically allied diseases as polio-

myelitis. Here the transfer is direct from man to man so that no intermediate vector exists which can be effectively controlled. Here, too, the parasite is so well adjusted to the human host that well carriers are so numerous as to make isolation procedures almost valueless. On this front of the war against disease, the microbe has a strategically strong position. It seems probable that in dealing with this group of diseases epidemiological defenses are not promising; and that it would be wiser to focus our research on the physiological processes which contribute to the resistance—or lack of resistance—of the individual human host. If a new Pasteur could tell us why upper respiratory epidemics occur in winter and poliomyelitis epidemics occur in summer, we might be able to build physiological defenses as significant as those epidemiological defenses which are yielding such spectacular results in the control of yellow fever and malaria.

CHRONIC DISEASE AS A PUBLIC HEALTH PROBLEM

IT is an encouraging sign of the alertness of leaders in medicine and public health that interest in the problems of chronic illness is growing with leaps and bounds. Our most progressive state and city health departments are, more and more, giving these problems first priority in their planning for the future.

A recently published report of the California Department of Public Health¹ well illustrates the importance of the issue. Of California's 10 million population it is estimated that approximately half a million have *diagnosed* chronic illness. Almost a fourth of these are permanently disabled. In addition, a hundred thousand Californians are thought to have *undiagnosed* heart disease, and 70,000 undiscovered diabetes. These statistical estimates of the number of persons having some sort of chronic illness follow fairly closely those made in New York and Connecticut. Such data necessarily fall short of providing accurate information as to the number of persons affected by various degrees of disability and they cannot be translated into quantitative estimates of the diverse services needed by these persons. The time seems ripe for conducting field surveys, in which an adequate sample of the chronically ill would be studied medically to determine their needs in quantitative terms.

At the state level, the report recommends that the State Department of Public Health in California establish an advisory chronic disease council, study the need for additional hospitals and laboratories to carry on research in chronic disease, maintain a statistical service on chronic disease, and help plan programs for professional education in the field. The department and the California Advisory Hospital Council are urged to devote special attention to the need for adding chronic hospital beds and to the "development and expansion" of custodial, nursing home, home care, and rehabilitation services.

"Local health agencies" are charged with the responsibility for developing preventive services, including mass screening methods, for "making available adequate diagnostic and therapeutic services either in their own communities" or by arrangement with nearby communities, for making available "sufficient nursing custodial substitute home care facilities" and for developing "comprehensive home care programs" including "diagnostic and therapeutic services, bedside nursing, medical social service and housekeeping service."

Another recent report of great significance is that of the Commission on Chronic Illness² summarizing the proceedings of the first meeting of that Commission. This Commission, it will be recalled, was created under the sponsorship of the American Hospital Association, the American Medical Association, the American Public